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EXAMINER
KIM, HONG CHONG

ART UNIT	PAPER NUMBER
2185	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

		Application No.	Applicant(s)
Office Action Summary		09/832,812	SARKOZY ET AL.
		Examiner	Art Unit	
		Hong Kim	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

    A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>24 February 2010</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-49 and 56-165</u> is/are pending in the application.

    4a) Of the above claim(s) <u>11-49 and 56-165</u> is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-10</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claim(s) <u>11-49 and 56-165</u> are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>19 February 2002</u> is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-49 and 56-165 are presented for examination. This office action is in
response to the amendment filed on 2/24/2010.

2.   Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to
timely apprise the Office of any prior or concurrent proceeding in which Patent No.
5,93,919 is or was involved. These proceedings would include interferences, reissues,
reexaminations, and litigation.

        Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to
timely appraise the Office of any information which is material to patentability of the
claims under consideration in this reissue application.

        These obligations rest with each individual associated with the filing and
prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and
1442.04.

3.   Any objections or rejections made in the previous office action which are not
specifically repeated below are withdrawn.

4.   Again, the amendments to the claims filed on 8/6/09 is defective for failure to
comply with provisions of 37 CFR 1.173.

        Although applicant include a very general statement for support for claim
changes, however, each change made in the claim is not being accompanied by a

concise explanation of the support in the disclosure of the patent for the change made

to the claim (i.e., support for all changes made in the claims, whether insertions or

deletions) (37CFR 1.173 C and MPEP 1453). In other words, the claimed subject

matter for each of the claims is not clearly mapped to the specification by page and line

number, and to the drawing, if any, by reference characters. A concise explanation of

the subject matter defined in each of the claims involved in the reissue amendment,

which must refer to the specification by page and line number, and to the drawing, if

any, by reference characters. While reference to page and line number of the

specification requires somewhat more detail than simply summarizing the invention, it is

considered important to enable the Examiner to more quickly determine where the

claimed subject matter is described in the application. Also every means plus function

and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be

identified and the structure, material, or acts described in the specification as

corresponding to each claimed function must be set forth with reference to the

specification by page and line number, and to the drawing, if any, by reference

characters. Also support for a program storage medium and a computer readable

medium should be provided to prevent possible 112 1st paragraph and 101 rejections.

Applicant did not clearly point out what is changed in the "Remarks" portion of the

amendment.   A clear explanation on each of the newly added claims 1-49 and 56-165

should appear in the remarks (see MPEP 1453).

5.   Applicant is notified that any subsequent amendment to the specification and/or claims must comply with 37 CFR 1.173(b). In addition, when any substantive amendment is filed in the reissue application, which amendment otherwise places the reissue application in condition for allowance, a supplemental oath/declaration will be required. See MPEP § 1414.01.Applicant is notified that any subsequent amendment to the specification and/or claims must comply with 37 CFR 1.173(b). In addition, when any substantive amendment is filed in the reissue application, which amendment otherwise places the reissue application in condition for allowance, a supplemental oath/declaration will be required. See MPEP § 1414.01.

6.   Applicant's election with traverse of species I (claims 1-10) in the reply filed on 2/24/2010 is acknowledged. The traversal is on the ground(s) that the examiner has failed to show that the claims represent 12 independent or distinct inventions. This is not found persuasive because this application contains claims directed to patentably distinct species of the claimed invention. This application appears to contain twelve distinct species of the claimed a mass storage for a protection which are as follows:

I.   A mass storage system protection utilizing parity and mirroring protection (claims 1-10).

II.   A mass storage system protection utilizing user selection commands (claims 105-108, 125-129, 133-138, and 158-160)

III.   A mass storage system protection utilizing parity generation and mirroring (claims 94-99, 112-115, and 139-142).

IV.   A mass storage system protection utilizing strip (claims 84-87, 109-111, 116-117, 118- 124, 147, 152, and 161-162).

V.   A mass storage system protection utilizing parity and skew (claims 23- 28, 148-150, and 163-165).

VI.   A mass storage system protection utilizing mirroring (claims 11-16, 17-22, and 29-34).

VII.   A mass storage system protection wherein second storage address is located in a disk drive separate from the disk drive containing the first storage address (claims 143-146 and 151).

VIII.   A mass storage system protection utilizing a cache and a hot spare (claims 73-83).

IX.   A mass storage system protection utilizing parity inhibit and off-line party generation (claims 37-39, 40-41, 42, 43-45, 56-59, 64-72, 153, and 155-157).

X.   A mass storage system protection utilizing data stored without parity (claims 60-63, 100-104, and 130-132).

XI.   A mass storage system protection containing other data when the first logical unit is not selected by user form mirroring (claims 88-93).

XII.   A mass storage system protection utilizing storage segments of the mass storage devices not within the logical unit designated for mirroring (claims 35, 36, 46-49 and 154).

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The requirement is still deemed proper and is therefore made FINAL.

7.   The inventions are distinct, each from the other because of the following reasons:
Species I to XII have different modes of operation, have different functions, and/or
different effects. (MPEP 806.04, MPEP 808.01).

Accordingly, Claims 11-49 and 56-165 are withdrawn from consideration as being
directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

8.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show
every feature of the invention specified in the claims. Therefore, the subject matter of
"a disk allocation mechanism", "a memory management mechanism", "a designated
logical unit", "a first copy" , " a first storage address", "an assigned storage address", "a
second copy", " a second storage address" and "asserting and de-asserting a parity
inhibit command" must be shown or the feature(s) canceled from the claim(s). No new
matter should be entered.

        Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in
reply to the Office action to avoid abandonment of the application. Any amended
replacement drawing sheet should include all of the figures appearing on the immediate
prior version of the sheet, even if only one figure is being amended. The figure or figure
number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,
and where necessary, the remaining figures must be renumbered and appropriate
changes made to the brief description of the several views of the drawings for
consistency. Additional replacement sheets may be necessary to show the renumbering
of the remaining figures. Each drawing sheet submitted after the filing date of an
application must be labeled in the top margin as either "Replacement Sheet" or "New
Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,
the applicant will be notified and informed of any required corrective action in the next
Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

9.   Claims 1, 6, and 10 are objected to because of the following informalities:

10.   As to claim 1 in line 20 "the designated logical unit" lacks antecedent basis.   In
line 22, it appear that "the assigned storage address" lacks antecedent basis.   In lines
21-22, it is unclear to the Examine how it is possible to write a first copy in a designated
logical unit into an assigned storage address in the designated logical unit.   Instant
application only discloses mirroring a first data block from a first logical unit to the
second logical unit, (See Fig. 7B).   In lines 24-25, it is unclear to the Examine how it is
possible to write a second copy of the data block (defined in line 21) in a designated
logical unit into another storage address in the disk drives.   Instant application only
discloses mirroring a second data block from a first logical unit to the second logical
unit, (See Fig. 7B).

11.   As to claim 6 in line 21 "the designated logical unit" lacks antecedent basis.   In

line 23, it appear that "the assigned storage address" lacks antecedent basis.   In lines

22-23, it is unclear to the Examine how it is possible to write a first copy in a designated

logical unit into an assigned storage address in the designated logical unit.   Instant

application only discloses mirroring a first data block from a first logical unit to the

second logical unit, (See Fig. 7B).   In lines 25-26, it is unclear to the Examine how it is

possible to write a second copy of the data block (defined in line 22) in a designated

logical unit into another storage address in the disk drives.   Instant application only

discloses mirroring a second data block from a first logical unit to the second logical

unit, (See Fig. 7B).

12.   As to claim 10, it appears that c\"claim 9" should be changed to –claim 8—for

consistency (see claim5).

Appropriate correction is required.

Claim Rejections - 35 USC ' 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as
set forth in section 102 of this title, if the differences between the subject matter sought to be
patented and the prior art are such that the subject matter as a whole would have been obvious
at the time the invention was made to a person having ordinary skill in the art to which said
subject matter pertains. Patentability shall not be negatived by the manner in which the invention
was made.

1.   Claims 1, 2, 4, 6, 7, and 9 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Applicant's Admitted Prior Art (AAPA) col. 1-2 in view of

InfoWorld, March 25, 1996 v18 n13n p42(1), Rathunde US Patent No. 5574,851,

or Jacobson et al. (Jacobson) US Patent No. 5,546,558 and further in view of

Mourad, US Patent No. 5,678,061, Stallmo US Patent No. 5,519,844, or The

RAIDBook, Edition 1-1, The RAID Advisory Board, November 18, 1983, entire

pages.

As to claims 1 and 6, AAPA discloses in a mass storage mechanism for a system

having mass storage devices for storing data and parity blocks respectively containing

data and parity information wherein the system includes a host processor including

memory and disk management facilities and a disk platform connected from the host

processor and controlling a plurality of disk drive units comprising the mass storage

devices (col. 1 lines 25- col. 2 lines 57 and see Fig. 2 in US patent 5,257,367), a

protection mechanism providing user selectable levels of protection against data loss,

comprising:

 the plurality of disk drives for storing data in data blocks in storage segments of the

 disk drives and for storing parity blocks in storage segments of the disk drives (col. 1

 line 53 thru col. 2 line 19),

 each parity block contains parity information relating to the data stored in a plurality of

 corresponding data blocks wherein each one of the corresponding data blocks are

 located in a different one of the data disk drives (col. 1 line 53 thru col. 2 line 19),

 a memory management mechanism for controlling operations of the disk platform for

 writing data blocks and parity blocks into the disk drives (col. 1 line 25 thru col. 2 line

 27 and Fig. 2 in US patent 5,257,367), and

writing at least one parity block containing parity information relating to the data block

into the disk drives (col. 1 line 53 thru col. 2 line 19).

Although, AAPA discloses using parity information and both mirroring data and

parity in a second set of disk or a second mass storage system to increase data

protection in a disk system, AAPA does not specifically disclose a disk allocation

mechanism for storing an identification of at least one of the units to be mirrored and

the memory management mechanism being responsive to the identification of a unit for

mirroring all data blocks written into the designated unit.

InfoWorld discloses a disk allocation mechanism for storing an

identification (RAID level) of at least one of the units to be mirrored and the

memory management mechanism being responsive to the identification of a unit

for mirroring all data blocks written into the designated unit ("supports migration

between RAID Levels 0, 1, 3, and 5" and "The system supports RAID Levels 0,

0+1, 1, and 5, as well as a variant of RAID Level 3" read on this limitation since

the RAID level identifies whether the disk system is mirrored or not) for the

purpose of proving different level of protection.

Alternatively, Rathunde discloses a disk allocation mechanism for storing

an identification (RAID level) of at least one of the units to be mirrored and the

memory management mechanism being responsive to the identification of a unit

for mirroring all data blocks written into the designated unit (abstract,

reconfiguration on a RAID level 0, 1, 2, 3, 4, or 5 disk array) for the purpose of

proving different level of protection

Alternatively, Jacobson discloses a disk allocation mechanism for storing an identification (RAID level) of at least one of the units to be mirrored and the memory management mechanism being responsive to the identification of a unit for mirroring all data blocks written into the designated unit (col. 7 lines 54 +, level change) for the purpose of proving different level of protection.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a disk allocation mechanism for storing an identification of at least one of the units to be mirrored and the memory management mechanism being responsive to the identification of a unit for mirroring all data blocks written into the designated unit as taught by InfoWorld, Rathunde, or Jacobson into the disk storage mechanism of AAPA for the advantages stated above.

Although, AAPA discloses a second set of disk drives to store duplication data (col. 2 lines 14-18), neither AAPA, InfoWorld, Rathunde, nor Jacobson specifically discloses wherein the storage segments of the disk drives are organized into at least two functionally separate logical units, writing a first copy of a data block assigned to a first storage address in a designated logical unit into the assigned storage address in the designated logical unit and writing a second copy of the data block assigned to a storage address in a designated logical unit into a second storage address in the disk drives wherein the second storage address is skewed with respect to the first storage address so that the second storage address is located in a disk drive separate from the disk drive containing the first storage address.

Mourad discloses wherein the storage segments of the disk drives are
organized into at least two functionally separate logical units (Fig. 2, col. 4 lines
5-20, a primary section and a secondary section), writing a first copy (Fig. 2 D0 in
a primary section and a secondary section) of a data block assigned to a first
storage address in a designated logical unit into the assigned storage address in
the designated logical unit and writing a second copy (Fig. 2 D1 in a primary
section and a secondary section and col. 4 lines 5-50) of the data block assigned
to a storage address in a designated logical unit into a second storage address in
the disk drives wherein the second storage address is skewed with respect to the
first storage address so that the second storage address is located in a disk drive
separate from the disk drive containing the first storage address (Fig. 2 see D0
and D1 in a primary section and a secondary section and col. 4 lines 5-50) for the
purpose of increasing flexibility and reliability of a drive storage system.

Alternatively, Stallmo discloses wherein the storage segments of the disk
drives are organized into at least two functionally separate logical units (Fig. 2D
Logical Volume #0 and Logical Volume #1), writing a first copy (Block 4 in Fig.
2D) of a data block assigned to a first storage address in a designated logical
unit into the assigned storage address in the designated logical unit and writing a
second copy (Block 12 in Fig. 2D) of the data block assigned to a storage
address in a designated logical unit into a second storage address in the disk
drives wherein the second storage address is skewed with respect to the first
storage address so that the second storage address is located in a disk drive

separate from the disk drive containing the first storage address (Blocks 4 and 12
in Volumes #0 and #1 in Fig. 2D) for the purpose of increasing flexibility and
reliability of a drive storage system

Alternatively, RAIDBook discloses wherein the storage segments of the
disk drives are organized into at least two functionally separate logical units
(Member Disks 0-2 and Disk 3-5 in Fig. 43), writing a first copy (Chunk 0) of a
data block assigned to a first storage address in a designated logical unit into the
assigned storage address in the designated logical unit and writing a second
copy (Chunk 1) of the data block assigned to a storage address in a designated
logical unit into a second storage address in the disk drives wherein the second
storage address is skewed with respect to the first storage address so that the
second storage address is located in a disk drive separate from the disk drive
containing the first storage address (relationship between Chunk 0 and Chunk 1)
for the purpose of increasing flexibility and reliability of a drive storage system

Accordingly, it would have been obvious to one having ordinary skill in the
art at the time the invention was made to incorporate wherein the storage
segments of the disk drives are organized into at least two functionally separate
logical units, writing a first copy of a data block assigned to a first storage
address in a designated logical unit into the assigned storage address in the
designated logical unit and writing a second copy of the data block assigned to a
storage address in a designated logical unit into a second storage address in the
disk drives wherein the second storage address is skewed with respect to the

first storage address so that the second storage address is located in a disk drive

separate from the disk drive containing the first storage address as taught by

Mourad, Stallmo, or RAIDBook into the combined disk storage mechanism of

AAPA and InfoWorld, Rathunde, or Jacobson for the advantages stated above.

As to claims 2 and 7, Wherein the data blocks are organized in the data disk

drives in a striped configuration so that each sequentially addressed data block is

located in a different sequential one of the disk drives is disclosed by AAPA (col. 1

lines 64-67), InfoWorld (RAID Levels 0+1, 1, 5, and a variant of RAID Level3),

Rathunde (Fig. 2), Jacobson (Fig. 3), Mourad (Fig. 2), Stallmo (Fig. 2D), and

RAIDBook (Fig. 43).

As to claims 4 and 9, Wherein the identification of at least one of the logical

units to be mirrored is selectively entered by user command is disclosed by InfoWorld

("supports migration between RAID Levels 0, 1, 3, and 5" and "The system supports

RAID Levels 0, 0+1, 1, and 5, as well as a variant of RAID Level 3" read on this

limitation since the RAID level can be selected by a user), Rathunde (abstract,

reconfiguration on a RAID level 0, 1, 2, 3, 4, or 5 disk array) , Jacobson (col. 7 lines

54+), AAPA (col. 2 lines 14-18), Mourad (col. 4 lines 32-34), Stallmo (abstract,

selecting redundancy level of none, one or two and RAID configuration), and

RAIDBook (selecting RAID level on page 15 bottom).

2.   Claims 3, 5, 8 and 10 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Applicant's Admitted Prior Art (AAPA) col. 1-2 in view of in

view of Mourad, US Patent No. 5,678,061, Stallmo US Patent No. 5,519,844, or

The RAIDBook, Edition 1-1, The RAID Advisory Board, November 18, 1983,

entire pages and further in view of InfoWorld, March 25, 1996 v18 n13n p42(1) or

Murai US Patent No 5,033,050.

      As to claims 3 and 8 , AAPA discloses in a mass storage mechanism for a

system having mass storage devices for storing data blocks containing data and parity

blocks containing parity information wherein the system includes a host processor

including memory and disk management facilities and a disk platform connected from

the host processor and controlling a plurality of disk drive units comprising the mass

storage devices (col. 1 lines 25- col. 2 lines 57 and see Fig. 2 in US patent 5,257,367),

a protection mechanism providing user selectable levels of protection against data loss,

comprising:

 the plurality of disk drives for storing data blocks in storage segments of the disk drives

 and storing parity blocks in storage segments of the disk drives(col. 1 line 53 thru col. 2

 line 19),

 each parity block contains parity information relating to the data stored in a plurality of

 corresponding data blocks wherein each one of the corresponding data blocks are

 located in a different one of the disk drives(col. 1 line 53 thru col. 2 line 19),

a memory management mechanism for controlling operations of the disk platform for

writing data blocks and parity blocks into the disk drives (col. 1 line 25 thru col. 2 line

27 and Fig. 2 in US patent 5,257,367),

Although, AAPA discloses a second set of disk drives to store duplication data

(col. 2 lines 14-18), AAPA does not specifically disclose wherein the storage

segments of the disk drives are organized into at least two functionally separate logical

units for storing data blocks wherein each logical unit includes storage segments on

each one of the disk drives.

Mourad discloses wherein the storage segments of the disk drives are

organized into at least two functionally separate logical units for storing data

blocks wherein each logical unit includes storage segments on each one of the

disk drives (Fig. 2, col. 4 lines 5-20, a primary section and a secondary section)

for the purpose of increasing flexibility of a drive storage system.

Alternatively, Stallmo discloses wherein the storage segments of the disk

drives are organized into at least two functionally separate logical units for storing

data blocks wherein each logical unit includes storage segments on each one of

the disk drives (Fig. 2D Logical Volume #0 and Logical Volume #1) for the

purpose of increasing flexibility of a drive storage system

Alternatively, RAIDBook discloses wherein the storage segments of the

disk drives are organized into at least two functionally separate logical units for

storing data blocks wherein each logical unit includes storage segments on each

one of the disk drives (Member Disks 0-2 and Disk 3-5 in Fig. 43) for the purpose

of increasing flexibility of a drive storage system

Accordingly, it would have been obvious to one having ordinary skill in the

art at the time the invention was made to incorporate wherein the storage

segments of the disk drives are organized into at least two functionally separate

logical units for storing data blocks wherein each logical unit includes storage

segments on each one of the disk drives as taught by Mourad, Stallmo, or

RAIDBook into the disk storage mechanism of AAPA for the advantages stated

above.

Although, AAPA discloses using parity information and both mirroring data and

parity in a second set of disk or a second mass storage system to increase data

protection in a disk system, neither AAPA, Mourad, Stallmo, nor RAIDBook specifically

discloses wherein the memory management mechanism is responsive to assertion of a

parity inhibit command for writing only data blocks into the disk drives, the memory

management mechanism is responsive to de-assertion of the parity inhibit command

for determining which data blocks have been written into the disk drives without

corresponding parity blocks written into a disk drive, reading the data blocks written

into the disk drives without corresponding parity blocks and all associated data blocks

having a corresponding parity block corresponding to each of the data blocks written

into the disk drives without corresponding parity blocks, and generating and writing

into a disk drive at least one parity block corresponding to each of the data blocks

written into the disk drives without corresponding parity blocks.

InfoWorld discloses wherein the memory management mechanism is
responsive to assertion of a parity inhibit command (Selecting RAID Level) for
writing only data blocks into the disk drives, the memory management
mechanism is responsive to de-assertion of the parity inhibit command for
determining which data blocks have been written into the disk drives without
corresponding parity blocks written into a disk drive, reading the data blocks
written into the disk drives without corresponding parity blocks and all associated
data blocks having a corresponding parity block corresponding to each of the
data blocks written into the disk drives without corresponding parity blocks, and
generating and writing into a disk drive at least one parity block corresponding to
each of the data blocks written into the disk drives without corresponding parity
blocks ("supports migration between RAID Levels 0, 1, 3, and 5" and "The
system supports RAID Levels 0, 0+1, 1, and 5, as well as a variant of RAID Level
3" read on this limitation since selection between the RAID level 0 or 1 and 3 or 5
providing capability for inhibiting and allowing parity generation) for the purpose
of proving different level of protection.

Alternatively, Murai discloses wherein the memory management mechanism is
responsive to assertion of a parity inhibit command (col. 3 line 56 thru col. 4 line 12) for
writing only data blocks into the disk drives, the memory management mechanism is
responsive to de-assertion of the parity inhibit command for determining which data
blocks have been written into the disk drives without corresponding parity blocks
written into a disk drive, reading the data blocks written into the disk drives without

corresponding parity blocks and all associated data blocks having a corresponding

parity block corresponding to each of the data blocks written into the disk drives without

corresponding parity blocks, and generating and writing into a disk drive at least one

parity block corresponding to each of the data blocks written into the disk drives without

corresponding parity blocks (col. 3 line 56 thru col. 4 line 12) for the purpose of

providing different level of protection.

Accordingly, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to incorporate wherein the memory management

mechanism is responsive to assertion of a parity inhibit command for writing only data

blocks into the disk drives, the memory management mechanism is responsive to de-

assertion of the parity inhibit command for determining which data blocks have been

written into the disk drives without corresponding parity blocks written into a disk drive,

reading the data blocks written into the disk drives without corresponding parity blocks

and all associated data blocks having a corresponding parity block corresponding to

each of the data blocks written into the disk drives without corresponding parity blocks,

and generating and writing into a disk drive at least one parity block corresponding to

each of the data blocks written into the disk drives without corresponding parity blocks

as taught by InfoWorld or Murai into the combined disk storage mechanism of AAPA,

Mourad, Stallmo, and RAIDBook for the advantages stated above.

As to claims 5 and 10, The parity inhibit command is asserted and de-asserted

by user command is disclosed by InfoWorld ("supports migration between RAID Levels

0, 1, 3, and 5" and "The system supports RAID Levels 0, 0+1, 1, and 5, as well as a

variant of RAID Level 3" read on this limitation) or Mourad (col. 3 line 56 thru col. 4 line

12).

Conclusion

1.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.   See attached PTO-892.

2.   A shortened statutory period for response to this action is set to expire 3 (three)

months and 0 (zero) days from the mail date of this letter. Failure to respond within the

period for response will result in **ABANDONMENT** of the application (see 35 USC 133,

MPEP 710.02, 710.02(b)).

3.   When responding to the office action, Applicant is advised to clearly point out the

patentable novelty which he or she thinks the claims present in view of the state of the

art disclosed by the references cited or the objections made. He or she must also show

how the amendments avoid such references or objections.   See 37 C.F.R. ' 1.111(c).

4.   When responding to the office action, Applicants are advised to provide the

examiner with the line numbers and page numbers in the application and/or references

cited to assist examiner to locate the appropriate paragraphs.

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hong C Kim whose telephone number is (571) 272-

4181. The examiner can normally be reached on M-F 9:00 to 6:00.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Sanjiv Shah can be reached on (571) 272-4098. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

    Any inquiry of a general nature or relating to the status of this application should be
    directed to the TC 2100 whose telephone number is (571) 272-2100.

6.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

7.   **Any response to this action should be mailed to:**

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to TC-2100:
            (571)-273-8300

Hand-delivered responses should be brought to the Customer Service Window
(Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

/Hong   Kim/
Primary Examiner, Art Unit 2185